

**COMPLETE LISTING OF CLAIMS**  
**IN ASCENDING ORDER WITH STATUS INDICATOR**

1. (Currently Amended) A radiation monitor comprising:
  - (a) a first chamber comprising:
    - a first electrically conductive housing having walls defining an internal volume of space;
    - ~~a cap covering the at least one hole through a cap of the~~ first housing; said cap having at least one hole for permitting entry of ambient air into the internal volume of space and conducting foam for preventing entry of dust therein; and
    - a first solid state nuclear track detector (SSNTD) disposed within the first housing with a first thin electrically conducting cover;
  - (b) a second chamber comprising:
    - a second electrically conductive housing having walls defining an internal volume of space;
    - ~~a cap covering the at least one hole through a cap of the~~ second housing; said cap having at least one hole for permitting entry of ambient air into the internal volume of space and conducting foam for preventing entry of duct therein; and
    - a second solid state nuclear track detector (SSNTD) disposed within the second housing with a second thin electrically conducting cover; and
    - a diffusion barrier within the second housing for blocking thoron radiation;
- wherein the second solid state nuclear track detector (SSNTD) is generally isolated from thoron radiation in the internal volume of space of the second housing;
- (c) a third chamber comprising:
  - a third electrically conductive housing having walls defining an internal volume of space;

a cap covering the at least one hole through a cap of the third housing;  
said cap having at least one hole for permitting entry of ambient air into  
the internal volume of space and conducting foam for preventing entry of  
duct therein;

a third solid state nuclear track detector (SSNTD) disposed within the  
third housing with a third thin electrically conducting cover; and

a diffusion barrier within the third housing for blocking thoron  
radiation;

wherein the third solid state nuclear track detector (SSNTD) is  
generally isolated from thoron radiation in the internal volume of space  
of the third housing.

2. (Currently Amended) The monitor of claim 1 wherein the second chamber further comprises a seal around the diffusion barrier for generally isolating ensuring isolation of the second solid state nuclear track detector (SSNTD) from thoron radiation in the internal volume of space of the second housing.
3. (Original) The monitor of claim 2 wherein the seal is an O-ring seal.
4. (Original) The monitor of claim 2 wherein the second chamber further comprises an O-shaped insert for holding the seal in place.
5. (Currently Amended) The monitor of claim 1 wherein the third chamber further comprises a seal around the diffusion barrier for generally isolating ensuring isolation of the third solid state nuclear track detector (SSNTD) from thoron radiation in the internal volume of space of the third housing.
6. (Original) The monitor of claim 5 wherein the seal is an O-ring seal.

7. (Original) The monitor of claim 5 wherein the third chamber further comprises an O-shaped insert for holding the seal in place.
8. (Original) The monitor of claim 1 further comprising a fastening portion provided on one of the first housing, the second housing and the third housing.
9. (Original) The monitor of claim 1 wherein there is generally no electrical charge present on the radiation monitor.
10. (Original) The monitor of claim 1 wherein the first, second and third chambers are arranged in a trilobed manner.
11. (Original) The monitor of claim 1 wherein the first housing, the second housing and the third housing are cylindrically shaped.
12. (Original) The monitor of claim 1 wherein each of the first housing, the second housing and the third housing is made from an electrically conductive material that shields the inside of the housing from radiation.
13. (Original) The monitor of claim 1 wherein the first housing, the second housing and the third housing are molded from conducting plastic with embedded nickel coated carbon fibers.
14. (Original) The monitor of claim 1 wherein each of the first SSNTD, the second SSNTD and the third SSNTD further comprises a solid state nuclear track film.
15. (Original) The monitor of claim 1 wherein each of the first SSNTD, the second SSNTD and the third SSNTD further comprises a solid state nuclear track film made of allyl diglycol carbonate.

16. (Original) The monitor of claim 1 wherein each of the first SSNTD, the second SSNTD and the third SSNTD further comprises a solid state nuclear track film made of cellulose acetate.
17. (Canceled)
18. (Currently Amended) The monitor of claim 1 further comprising:
  - (a) a fourth chamber comprising:  
a fourth electrically conductive housing having walls defining an internal volume of space;  
a cap covering the at least one hole through a cap of the forth housing;  
said cap having at least one hole for permitting entry of ambient air into the internal volume of space and conducting foam for preventing entry of dust therein; and  
a fourth solid state nuclear track detector (SSNTD) disposed within the fourth housing with a fourth thin electrically conducting cover.
19. (Original) The monitor of claim 18 further comprising a fastening portion and an additional fastening portion respectively provided on two of the first housing, the second housing, the third housing and the fourth housing.
20. (Original) The monitor of claim 18 further comprising a fastening portion provided on one of the first housing, the second housing, the third housing and fourth housing.
21. (Original) The monitor of claim 18 wherein there is generally no electrical charge present on the radiation monitor.
22. (Original) The monitor of claim 18 wherein the first, second, third and fourth chambers are arranged in a four-lobe manner.

23. (Original) The monitor of claim 18 wherein the first housing, the second housing, the third housing and the fourth housing are cylindrically shaped.
24. (Original) The monitor of claim 18 wherein each of the first housing, the second housing, the third housing and the fourth housing is made from an electrically conductive material that shields the inside of the housing from radiation.
25. (Original) The monitor of claim 18 wherein the first housing, the second housing, the third housing and the fourth housing are molded from conducting plastic with embedded nickel coated carbon fibers.
26. (Original) The monitor of claim 18 wherein each of the first SSNTD, the second SSNTD, the third SSNTD and the fourth SSNTD further comprises a solid state nuclear track film.
27. (Original) The monitor of claim 18 wherein each of the first SSNTD, the second SSNTD, the third SSNTD and the fourth SSNTD further comprises a solid state nuclear track film made of allyl diglycol carbonate.
28. (Original) The monitor of claim 18 wherein each of the first SSNTD, the second SSNTD, the third SSNTD and the fourth SSNTD further comprises a solid state nuclear track film made of cellulose acetate.
29. (Canceled)
30. (Original) The monitor of claim 18 wherein the first chamber and the second chamber comprise a first chamber pair for monitoring radiation and providing radiation measurement data; and  
the third chamber and the fourth chamber comprise a second chamber pair for monitoring radiation and providing radiation measurement data;

wherein radiation measurement data uncertainty is calculated based  
on the measurement data provided by the first and second chamber pairs.